BY ORDER OF THE COMMANDER,
51ST FIGHTER WING

51 FW INSTRUCTION 21-112

15 MARCH 2002

Maintenance

LAUNCH AND RECOVERY OF MUNITIONS OR EXPLOSIVES LOADED AIRCRAFT, END OF RUNWAY PROCEDURES, AND IMPOUNDMENT OF AIRCRAFT WITH HUNG ORDNANCE OR JAMMED GUNS

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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OPR: 51 OG/OGW (SMSgt David R. Petzoldt) Certified by: 51 OG/CC (Col P.K. White)/51 LG/CC (Col S. J. Schumacher)
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This instruction implements AFPD 21-1, *Managing Aerospace Equipment Maintenance* and fulfills the requirement of PACAFI 21-101 by establishing procedures for performing launch and recovery of explosive loaded aircraft, end of runway (EOR) procedures, hung ordnance and unsafe gun procedures, and impoundment procedures for aircraft with hung ordnance or jammed guns. It is applicable to all 51st Fighter Wing aircraft, transient aircraft and units deployed to Osan AB. Unit commanders and supervisors are responsible for compliance with the provisions of this instruction. Commanders and supervisors will ensure that all personnel subject to operations covered by this instruction are thoroughly knowledgeable of the inherent dangers of the operation and the safety precautions necessary for safe and efficient accomplishment. References 51 FWI 91-201, T.O.s 11A-1-33, 11W1-7-14-2, 11W1-7-16-2, 11W1-12-4-32, 11W1-12-10-2, 1A-10A-2-4JG-1, 1A-10A-6WC-6, 1A-10A-33-1-2, 1A-10A-2-94JG-6, 1F-16CG-2-10JG-00-1, 1F-16CG-2-94FI-00-1, 1F-16CG-2-94JG-50-1, 1F-16CG-6WC-1-11, 1F-16C-33-1-2, AFMAN 91-201, PACAFI 21-101, MCI 11-A/OA10, Volume 3, EOD 60 Series T.O.s.

1. Launch and Recovery of Explosive Loaded Aircraft.

1.1. Arming/dearming of explosive loaded aircraft will be performed in 51st SE/SEW approved areas only.

1.2. Consistent with approved Net Explosive Weight limitations, the following locations are designated as arm/dearm areas for large force exercises/local exercises/contingencies/alert operations and integrated combat turnarounds, with the exception of aircraft gun and rocket pods. These systems will be safed in designated EOR locations only. Approved locations include covered flow-through shelters, able and baker diamond shelters and hardstands, third generation shelters (Pig Pen), and cursory areas on either end of the Pig Pen.

1.3. Aircraft flow-thrus are designated as an alternate arm/dearm area during airfield construction or repair.

1.4. If immediately prior to launch (IPL) and safing procedures are performed at normal aircraft parking locations, the EOR inspection will consist of a cursory inspection only. The cursory inspection will ensure removal of all remaining safety pins as well as a quick check for any visible maintenance discrepancies.

1.5. If IPL and safing procedures are not performed at normal aircraft parking locations, ensure all live and captive AIM-9 dome/ influence fuze/target detector covers and locally manufactured TGM-65 dome covers are removed and remain at aircraft parking location. All remaining munitions safety pins and devices will be removed at EOR. All safety pins and munitions safety devices will be removed and stored inside panel W-79 (A-10) and pin storage box or wing weapons pylon storage area (F-16).

2. EOR.

2.1. Personnel Requirements:

2.1.1. One 7 skill level NCO as Cursory Supervisor (aircraft maintenance AFSC).

2.1.2. Minimum Team Composition:

2.1.2.1. Arming: One qualified marshaller, one qualified 2AXXX, and two qualified 2W1X1 (one of whom is checklist qualified).

2.1.2.2. Dearming: One 2AXXX or 2W1X1 qualified to marshal, and two qualified 2W1X1, (one of whom is checklist qualified).

2.2. Training Requirements:

2.2.1. 2AXXX personnel:

2.2.1.1. Maintenance orientation.

2.2.1.2. Current marshaling certification.

2.2.1.3. A-10/F-16 egress training.

2.2.2. 2W1X1 personnel:

2.2.2.1. A-10/F-16 weapons academics.

2.2.2.2. A-10/F-16 IPL practical training (conducted by weapons standardization).

2.2.2.3. Maintenance orientation.

2.2.2.4. Current marshaling certification, if applicable.

2.2.2.5. A-10/F-16 egress training when in charge of EOR.

2.3. Equipment Requirements:

2.3.1. See PACAFI 21-101, para 22.3 for standard equipment requirements.

2.3.2. If mobile non-frangible ground support equipment (i.e., light carts, heaters) are used on the airfield (EOR) in support of maintenance duties, they can be in place no more than 3 hours prior to

aircraft arrival and 3 hours after aircraft departure. After use, it must be removed from the aircraft parking area IAW UFC 3-260-01, Attachment 14, Airfield and Heliport Planning and Design.

2.3.2.1. Additional equipment requirements:

2.3.2.2. Double hearing protection (earplugs plus ear defenders/comm headset).

2.3.2.3. Aircraft static grounding cable (for use if aircraft shuts down).

2.3.2.4. Two TF-1 or NF-2 light-alls for use during hours of darkness if permanent lighting is not available.

2.3.2.5. At least one vehicle must be in the arm or dearm area for emergencies.

2.3.2.6. One radio with access to Maintenance Operations Center (MOC) and tower at arm/dearm area.

2.3.2.7. Step ladder, maintenance stand, or boarding ladder for non-emergency egress.

2.3.3. Protective equipment required for white phosphorous munitions:

2.3.3.1. Flame proof gloves.

2.3.3.2. Face shield.

2.3.3.3. Gauze sponges.

2.3.3.4. Two regular sponges.

2.3.3.5. Ten gallons of water.

2.4. General Information.

2.4.1. Cursory supervisor responsibilities:

2.4.1.1. Reports directly to their appropriate squadron production superintendent or expediter. The cursory supervisor is responsible for directing all launch/recovery, arm/dearm functions and movement of assigned aircraft at the cursory inspection area IAW applicable technical data.

2.4.1.2. Ensures team is in place 30 minutes prior to first scheduled takeoff.

2.4.1.3. Verifies active runway/cursory locations with MOC.

2.4.1.4. Ensures performance of FOD inspection of cursory areas prior to aircraft arrival.

2.4.1.5. Maintains radio communication with MOC and control tower to advise of any emergencies.

2.4.1.6. Ensures personnel are trained for duty.

2.4.1.7. Ensures all required equipment is available to EOR team members.

2.4.1.8. Ensures compliance with all other requirements of PACAFI 21-101.

2.4.2. If aircraft arming procedures are performed at the aircraft parking location and aircraft are not loaded with munitions, flares, or a hot gun, these aircraft are not required to stop at the dearm area.

2.4.3. At no time will personnel or aircraft pass in front of or behind the aircraft when forward firing ordnance is being armed/dearmed. All training/captive forward-firing munitions will be treated as live. No other personnel are allowed access to aircraft prior to safing.

2.4.4. If hot brakes are encountered, immediately declare a Ground Emergency and direct the aircraft to proceed to the hot brake area. EOR procedures will not commence until the aircraft brakes have cooled.

2.4.5. During emergencies, the on scene senior fire official will not allow any unauthorized personnel to approach the aircraft while safing procedures are being performed.

2.4.6. The nose wheel on the A-10 aircraft will be chocked and the right main wheel on the F-16 aircraft will be chocked for EOR checks. If aircraft shuts down, both main wheels will be chocked and landing gear safety pins installed.

2.4.7. All mechanical/electrical safing pins and munitions safety devices will be installed on unexpended munitions prior to the aircraft returning to the parking area.

2.4.8. 25 FS will maintain 27 end facility and 36 FS will maintain 09 end facility.

2.5. Procedures.

2.5.1. EOR Arming.

2.5.1.1. Marshaller:

2.5.1.1.1. Wears reflective vest at all times.

2.5.1.1.2. Marshals aircraft for parking and tire roll over.

2.5.1.1.3. Maintains verbal and visual contact with pilot.

2.5.1.1.4. Verifies armament switches are OFF, SAFE, or NORM and pilots hands are clear.

2.5.1.1.5. Monitors EOR inspection activities.

2.5.1.1.6. Ensures all personnel exit aircraft towards next aircraft to be inspected.

2.5.1.2. 2AXXX:

2.5.1.2.1. Chock and inspect nose tire (A-10). Chock and inspect right main tire (F-16).

2.5.1.2.2. Connects intercom cord to aircraft.

2.5.1.2.3. Performs roll over inspection and re-chocks aircraft.

2.5.1.2.4. Inspects aircraft IAW applicable EOR work cards and PACAFI-21-101.

2.5.1.2.5. Disconnects intercom cord.

2.5.1.2.6. (A-10) Inspects fuel system test box and closes panel W-79.

2.5.1.2.7. (A-10) Indicates test box switches “O.K.” to marshaler.

2.5.1.2.8. Removes chocks.

2.5.1.3. 2W1X1s:

2.5.1.3.1. Inspect both main tires before and after roll over (A-10). Inspects nose and left

main tire (F-16).

2.5.1.3.2. Verifies sortie requirements for gun and arms gun IAW EOR checklists.

2.5.1.3.3. Arms munitions on left/right side of aircraft IAW EOR checklist.

2.5.1.3.4. Performs cursory inspection of all armament stations and munitions.

2.5.1.3.5. Supervises arming of AGM-65 missiles, if applicable. (Paragraph **2.5.3.**)

2.5.1.3.6. Indicates armament systems "OK" to marshaller.

2.5.2. EOR Dearming:

2.5.2.1. 2AXXX

2.5.2.1.1. Marshals aircraft for parking.

2.5.2.1.2. Maintains visual contact with pilot.

2.5.2.1.3. Verifies all armament switches are OFF, SAFE, or NORM and pilots hands are clear.

2.5.2.1.4. Verifies all munitions are safe before aircraft returns to parking ramp/locations.

2.5.2.1.5. Disconnect intercom cord if applicable and indicates "chocks out"

2.5.2.1.6. Ensures all personnel exit aircraft towards next aircraft to be inspected.

2.5.2.1.7. Gives "OK" to pilot.

2.5.2.2. 2W1X1:

2.5.2.2.1. Inspects for hot brakes.

2.5.2.2.2. Chocks aircraft (A-10) nose tire, (F-16) right main tire.

2.5.2.2.3. Safes gun and all munitions.

2.5.2.2.4. Removes chocks and gives "OK" to marshaller.

2.5.3. AGM-65 Maverick boresight/arming procedures:

2.5.3.1. Aircraft will taxi to EOR.

2.5.3.2. The crew chief (2A3X3B/J) will establish voice communication with the pilot.

2.5.3.3. The pilot will inform the crew chief (2A3X3B/J) of intention to boresight the AGM-65 missile (F-16).

2.5.3.4. The pilot will perform the boresight IAW established procedures (F-16).

2.5.3.5. After the boresight is complete, pilot will inform the crew chief (2A3X3B/J) to begin EOR procedures (F-16).

2.5.3.6. The crew chief (2A3X3B/J) will ask the pilot to verify that hands are clear of all switches/controls.

2.5.3.7. Once this is verified, connect the igniter connectors. Perform stray voltage checks IAW T.O. 1A-10A-33-1-2 for each loaded station prior to connecting the igniter cables.

2.5.3.8. Continue EOR procedures as required and launch aircraft.

3. Hung or Unsafe Munitions/Guns.

3.1. Personnel Requirements:

3.1.1. Senior Fire Official is the on-scene commander.

3.1.2. One 2W1X1 7-Level supervisor.

3.1.3. Two 2W1X1 technicians.

3.1.4. One 2A3X3B/J qualified to marshal.

3.1.5. EOD personnel as determined by the on-scene commander.

3.2. Equipment Requirements:

3.2.1. Weapons and/or hot gun CTK.

3.2.2. A minimum of one 150-pound halon fire extinguisher or equivalent.

3.2.3. Face shields or eye protection as required.

3.2.4. (A-10) Petroleum based oil product to render loose propellant inert and a suitable container for the residue as required.

3.2.5. (F-16) One or more 20MM ammunition cans as required.

3.3. Preliminary Actions for Hung or Unsafe Munitions/Gun:

3.3.1. The agency identifying an aircraft returning with a Hung or Unsafe Munition/Gun will notify MOC. MOC in turn will notify the Fire Department, the appropriate fighter squadron weapons section and production superintendent, Armament Flight, Quality Assurance, safety, EOD, and weapons AFETS.

3.3.2. If the aircraft taxies to the hot cargo pad, MOC will notify security forces to close perimeter road until the hung/unsafe ordnance (to include SUU-25 flare pod) and unsafe gun are safe.

3.3.3. The fire department will respond to all hung ordnance/jammed guns or anytime an aircraft is directed to the hot cargo pad for an unsafe condition.

3.3.4. EOD will respond at the request of the on-scene commander to perform actions on a confirmed hung ordnance or unsafe gun.

3.3.5. SOF/control tower should direct all taxiing aircraft as far away as possible from the aircraft with hung ordnance. Flying aircraft should not land unless absolutely necessary. Others awaiting takeoff should hold at end of runway opposite hazardous aircraft until cleared to proceed.

3.3.6. Armament flight will be dispatched to assist fighter squadron personnel as required.

3.3.7. Aircraft with hung/unsafe ordnance (except BDU-33) and flares will proceed directly to the hot cargo pad when landing on runway 27. Aircraft should attempt to park as far as possible away from the runway facing the gun abutment adjacent to perimeter road. When landing on runway 09, aircraft will proceed to EOR de-arm area. Aircraft with an unsafe SUU-25 flare pod should attempt to park facing the runway.

3.3.8. Aircraft returning with an unsafe gun light, gun malfunction, gun that cannot be rotated, or where gun pin cannot be installed, will proceed directly to the unsafe gun area. Primary is hot cargo pad; alternate is taxiway bravo spots 1 & 3.

3.3.9. If the de-arm crew is not familiar or trained on the type aircraft carrying the hung ordnance, EOD (with the assistance of weapons standardization) will attempt to safe the munitions at the direction of the OG/CC.

3.4. Hung or Unsafe Munitions/Gun Procedures:

3.4.1. The procedures in all applicable technical orders, AFMAN 91-201, as well as this instruction will be followed when performing any safing/clearing procedures.

3.4.2. Communication will be established with the aircrew prior to performing safing procedures.

3.4.3. The aircraft will be chocked and all loaded munitions made safe prior to beginning hung or unsafe munitions/gun actions. Personnel will approach the aircraft from the side after the fire department has verified the area as safe to enter.

3.4.4. Personnel will not approach the aircraft while safing procedures are being performed until cleared by the on-scene commander.

3.4.5. The weapons crew will attempt to safe the item IAW applicable technical data and will advise MOC when the safety pins/devices are installed and the item has been identified as safe.

3.4.6. Once the munition/gun is safe, the aircraft will be allowed to taxi back to the parking area. If munition/gun cannot be safed, the aircraft will be shut down. EOD, with fighter squadron weapons personnel assistance, will dispose of the ordnance/gun IAW established procedures and appropriate technical orders.

3.4.7. A-10 Gun Specifics:

3.4.7.1. Do not rotate the gun without the safety pin installed unless directed by procedures in TO 1A-10A-2-94JG-6.

3.4.7.2. If the gun cannot be cleared of all live rounds using clearing procedures outlined in TO 1A-10A-2-94JG-6, the gun will be removed from the aircraft and turned over to EOD. EOD will be responsible for transporting and safing or possible explosive destruction of the gun. Fighter squadron weapons personnel will assist EOD with transportation.

3.4.7.3. Explosive disposal of unsafe GAU-8 gun:

3.4.7.3.1. EOD will determine the best procedure to eliminate the hazard.

3.4.7.3.2. Prior to the explosive destruction of a gun, the unsafe gun team supervisor will contact the wing weapons manager for coordination with the OG/LG commanders for the dispatch of the Air Force Gun Rapid Response Team. Team contact numbers listed in order of precedence: DSN 777-5152/7056/7803/8515/1926. After duty hours, contact Hill AFB Command Post at DSN 777-3007.

3.4.8. F-16 Gun specifics:

3.4.8.1. The gun safing pin will be installed prior to performing any clearing procedures.

3.4.8.2. Do not attempt to install the clearing sector holdback tool or attempt to check the gun for rounds in the battery position with aircraft engines running.

3.4.8.3. After aircraft engine shutdown, attempts will be made to install the clearing sector holdback tool and rotate the gun.

3.4.8.4. If rounds are jammed in battery position, remove gun barrels and ammunition from gun housing.

3.4.9. The 2W1X1 7-Level supervisor is the final authority for the safe condition of the gun.

3.4.10. All unexpended rounds, primers, and projectiles will be removed from gun by a 2W171 technician prior to transportation to armament shop for maintenance.

3.4.11. Aircraft will not be towed until the unsafe condition is corrected.

3.5. Unsafe Gun Training Requirements:

3.5.1. For A-10 aircraft, all 2W1X1s working on unsafe 30mm GAU-8 guns must first attend academic training taught by the weapons AFETS representative at the armament flight. Track all personnel qualifications through CAMS.

3.6. Gun System Jams during Loading/Unloading Operations:

3.6.1. Armament flight will be dispatched to assist fighter squadron personnel as required.

3.6.2. A gun system jam during loading/unloading will be treated as unsafe until the exact conditions can be determined.

3.6.3. A qualified weapons technician will positively identify any live rounds remaining in the gun.

3.6.4. If the gun cannot be safed IAW technical data procedures, immediately notify the MOC.

3.6.5. At this time, no further action will be taken to safe the gun until a designated safe location to continue operations is determined by the Deputy Operations Group Commander for Maintenance, fighter squadron supervision, Wing Safety, and wing weapons manager.

3.7. Impoundment of Aircraft With Hung Ordnance or Jammed Gun.

3.7.1. Procedures.

3.7.1.1. Hung Ordnance:

3.7.1.1.1. Impound the aircraft IAW PACAFI 21-101 for all hung ordnance except BDU-33 practice bombs. If troubleshooting has determined the cause of the hung ordnance to be normally installed equipment/alternate mission equipment, release the aircraft from impoundment IAW PACAFI 21-101 and transfer the impoundment to the affected equipment.

3.7.1.1.1.1. An AFTO Form 350 will be attached to the equipment and will be bordered in red.

3.7.1.1.2. Gun Impoundments:

3.7.1.1.2.1. Impound aircraft IAW PACAFI 21-101 when items are missing from the gun and/or gun bay and the lost item cannot be located. The gun, handling set, and drum shall be removed and sent to the armament shop for a thorough search of the gun. After gun system removal from the aircraft, establish a separate impoundment for the gun after a thorough search of the aircraft fails to locate the missing item.

3.7.1.1.2.2. An AFTO Form 350, bordered in red, will be attached to the gun immediately after removal from aircraft.

3.7.1.1.2.3. The gun will be disassembled in the armament shop to the point necessary to ensure a thorough search for the lost item.

3.7.1.1.2.4. Release gun system from impoundment IAW PACAFI 21-101 after a thorough search and inspection by a 7-Level 2W1X1 armament technician and QA inspector.

DAVID E. CLARY, Brigadier General, USAF
Commander